

ABSTRACT OF THE DISCLOSURE

Z-buffer rendering of three-dimensional scenes is made more efficient through a method for *occlusion culling* by which occluded geometry is removed prior to rasterization. The method uses
5 *hierarchical z-buffering* to reduce the quantity of image and depth information that needs to be accessed. A separate *culling stage* in the graphics pipeline culls occluded geometry and passes visible geometry on to a *rendering stage*. The culling stage maintains its own z-pyramid in which z-values are stored at low
10 precision (e.g., in 8 bits). The efficiency of hierarchical z-buffering is improved through hierarchical evaluation of line and plane equations.